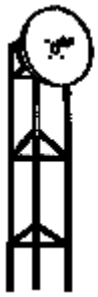

SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FORMED IN 1958

A NON-PROFIT AMATEUR TECHNICAL ORGANIZATION DEDICATED TO THE ADVANCEMENT OF COMMUNICATIONS ABOVE 1000 MC.

W6IFE Newsletter

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At the 7 February 2002 meeting of the SBMS, Dave, WA6CGR and Sam, K6VLM will provide an update on the 24 GHz projects. There will be a power meter and Spectrum analyzer to measure people's rigs. The SBMS meets at the American Legion Hall 1024 Main Street (south of the 91 freeway) in Corona, CA at 1900 hours local time on the first Thursday of each month. Check out the SBMS web site at http://www.ham-radio.com/sbms/.

SBMS BANQUET- We will be having our banquet on Feb. 16th at 4:30 pm in Norco- see Prez Sez

Last meeting Chip, N6CA gave an informative talk on Dish Evaluation with a Laser Pointer. His paper can be found on the SBMS web site at http://www.ham-radio.com/sbms/. Scroll down the page until you find Technical Information/ papers and software. Chip's paper is N6CA parabolic dish accuracy testing. Welcome to new members Chuck Mandt, W7VX of Redondo Beach and Jack Henry, N6XQ of San Diego. January was the annual visit of Paul, KH6HME to the mainland. Glad to have you visit us. Our visitor was Gary, WA6MEM of Palos

Verdes. Welcome. Plans are still in the works for having a Microwave Update session in Southern California with both the SBMS and the San Diego Microwave Group providing the manpower. 24 people present.

Last months newsletter- If you received just part of a newsletter due to a Post Office problem, please let me know so a replacement can be made. Bill, WA6QYR bburns@ridgenet.net.

The Prez Sez, Getting Started on Your 24 GHz P-com Project will be brought to you by Sam and Dave. Come to the meeting and learn what steps are necessary to get started on your Pcom 24 GHz conversion. Bring notepaper and pencils. We will have handouts and pictures as well as actual converted critters. However, this is not the complete story, it covers only what you need to do to check out the unit you have, what initial measurements you need to make and what changes you need to start doing. We hope to have PIC chips programmed and available so you can start on your synthesizer. Second IF board is coming out later.

24 GHz P-com Project News: I have modified our process of getting the project out to builders. As time is running short, I have asked Dave and Sam to have available at the meeting: 1. The data and pictures available for the initial stages of doing the conversion. 2. Programmed PIC upc chips for the first LO. There won't be many available as they are meant for members who can proceed with a minimum of support. I estimate in another month the complete kit will be available with second LO, PC board, parts kit, full instructions, first LO modification parts, and TCXO. If you don't have access to all the parts and need to work with full documentation, you might want to wait. The cost of the full kit will be very reasonable. In addition, I would like to thank Kurt, K6RRA for helping Dave with the web documentation. This is a huge project and any other help is greatly appreciated.

Notes on DC Wiring-Many of us are feverishly working on getting radios working and I thought I'd add a few notes on the input side. One year we had a spate of cross polarizing mistakes with radios and have probably learned a lesson: If it is possible to hook your radio up backwards on the DC, you will. So here are some techniques to keep you straight. It also helps to have connectors that can't be reversed. But don't bet your radio on it. 1.) Put "Idiot diodes" in your rigs and on each module. You won't regret it. However, make the diodes much larger in capacity than your fuses. Also, carry extra fuses attached to the radio assembly. Another technique that has been used is to have a relay in series with the input voltage and have it switched on through a diode. That way if the voltage is reversed, the relay doesn't fire and the rig is protected. No blown fuses and no .5 voltage drop. 2.) Put in plenty of bypassing around regulators. Regulators will help protect against reverse voltages and usually work best with low drop out models, but need to be bypassed with 10 uf caps. 3.) If you are running on battery, have a voltmeter hooked up for battery monitoring. I use an expanded voltmeter that reads from 90-140 vac that was converted to 9-14 vdc. Easy to read from a distance. 4.) Lastly, under load check the voltages to each module to assess the voltage drop through the wires. Sounds like overkill, but this way you know. You also might want to make notes of RF levels and dc voltages so that in two years you can look it up.

SBMS BANQUET- This year's annual SBMS dinner will be on Saturday, Feb 16 from 4:30 -7:30 pm. We will have door prizes, white elephant exchange and awards. Bring something in a box or wrapping for the exchange that deals with microwaves and has a value to you of about $10 or more. Hopefully without too many missing parts. The location is in Norco at the Steer Grill at 2395 Hammer Ave. They have a wide variety of food choices and an excellent selection of steaks with reasonable prices. Dinner will be paid for on separate checks and we will eat asynchronously. (Eat when you get there) The phone is 909-734-5441. It is between 2nd St. and 3rd St. on Hammer. Hammer Ave. is what Main St in Corona turns into if you go north. Get off of I-15 on Second St. in Norco and turn right. The place is on the right just before 3rd St. Come and enjoy a great steak (other stuff too), good company, and lots of fun. Wives, children and significant others welcome. Doug K6JEY, SBMS President

2002 Scheduling.

7 March-- Noise Figure seminar- review of techniques with testing available through 24 GHz. by Ken and Dave. 3.5 GHz report and 2002-2003 SBMS Officer Nominations.

4 April- Frequency measurement techniques for beginners. Counter with rubidium source will be available. Bring things to measure. 2002-2003 SBMS Officer elections.

April-May, dates TBA, Spring Sprints

April 22, 1030Z - Lyrids meteor shower

2 May- Dish and Feed basics for beginners. Types of feeds, dishes and mounts. Bring in an example and your projects to share.

4 June- 10 and 24 GHz project evaluation. Bring your equipment and get it evaluated. Power, Frequency, spectrum analysis.

June 8-10, 1800Z - 0300Z - ARRL June VHF QSO Party

Wants and Gots for sale

Wanted- 8 ft Prodelin offset Ku band dish Chip N6CA 310-539-5395

Wanted- 90 degree H-plane bend WR-42 Dave WA6CGR 909-318-5154

Wanted &endash; WR-90 to SMA adapter and SMA t/r relay Richard WW7D 949-855-4689

Wanted- large tripod for 4 ft dish Mel WA6JBD 909-369-6515

Wanted- - 90 degree H-plane bend WR-42 and three inches of WR-42 Miguel W6YLZ 818-349-8525

For Sale- 140 Spectrum analyzer 0-110 MHz and IF APC-SMA Larry N6PPO 818-917-4841

For Sale- Timewave DSP 597 with pwr sup and manual Doug K6JEY 562-424-3737

Activity reported at the January SBMS meeting- Doug, K6JEY had a "tombstone " 24 GHz transverter to show along with a very small hand key; Ed, W6OYJ has been working on the WSJT mode for both 2 mtrs and 1296 MHz; Kerry, N6IZW did some work on the "landmine" Pcom 24 GHz transverter and found that the homebrew Qualcomm noise source works at 24 GHz; Jeff, KN6VR did some 10 GHz LO work; Kurt, K6RRA has several microwave projects; Chuck, W7VX has 2.4 and 3.5 GHz transverters working; John, KJ6HZ worked with a 10 GHz Chaparral feed; Chip, N6CA found out his new TWTs were 90w input power rather than out put, provided a BIG battery to Clint, W1LP for operation from his ship; Jack, N6XQ has been on 6 mtrs; Chris, N9RIN has a synthesizer that has possibilities of operation from 500 MHz to 6 GHz; Gary, WA6MEM has a 3.4 GHz rig operating and is working on a 24 GHz rig; Mike, W6YLZ worked on a 10 w TWT; Larry, K6HLH worked through AO-40 70 cm to 2.4 GHz, and is working on a WSJT connection; Gordon, WA6FMX had worked on some satellite receivers; Dick, WB6DNX worked on his "tombstone" 24 GHz rig; Chuck, WA6EXV has been doing some paper design on a 1 w 24 GHz power amplifier using Fujitsu MMICs with Wilkinson splitters, Bill, WA6QYR has been working on inter face for the WSJT mode and with his 1296 MHz Qualcomm mod transverter into the 1296 to 2304 transverter that WA6EXV/ K6VLM are building; Mel, WA6JBD built a beacon for checking his early MACOM rig.

Reports for Activity weekend. I got my rig on 24 going and made a contact with Sam and Dave. 60 mw out. Still going to modify it for Low side injection at a 432 IF. Right now it is high side on 144. I was on Signal Hill on 10 and 24 wide and narrowband. Doug K6JEY SBMS Sahib

Bill, WA6QYR and Chuck, WA6EXV worked on putting signals through the SBMS translator 1296 MHz in / 2304 MHz out. The translator is still in burn in mode as Chuck adds control features to what he and Sam have built.

WSJT contact- On January 7 at 8:40 pm Ed, W6OYJ in San Diego (DM12) and Bill, WA6QYR in Ridgecrest (DM15) completed a contact on 144.140 MHz using the new digital mode called WSJT. This mode was announced in the December 2001 QST. Following the exchange of calls and grid squares, we tried SSB and found it to be marginal quality. Both stations were running similar equipment, 100w and 13 element beams. This

was a first contact for both, so it took some time to iron out the cockpit problems. Ed transmitted on the first 30 seconds of the minute and Bill the last 30 seconds. WWV on 10 MHz was Bill's source of time. The program lets the operator select text to be exchanged, but usually it is kept short. This mode is for meteor scatter people wanting long haul contacts via the short trail of a meteor. Definitely not for rag chewing. But for some of us looking to contact on the longer paths with noise level signals, this mode may help. Lots of our contest microwave contacts end up CW and sometimes using airplane scatter or cloud bounce for that few seconds on enhancement. Ed noted during the some 20 minutes to get everything set up and information exchanged that my signals had periods of enhancement, perhaps by aircraft coming or going in the Ontario or LAX areas between us. The WSJT mode uses similar computer to radio interface as does PSK31. The sound card generates the tones in the program sequences for the radio to transmit. It also sorts out the sounds coming from the radio for analysis by the software. With Windows type display the operator has control of many functions used during the contact. WSJT uses much more bandwidth (2 kHz) than the PSK31 (31 Hz) so is easier to tune for the other station. The software is free from http://pulsar.Princeton.edu/~joe/K1JT along with a user manual. There are several sources of interface hardware if you don't wish to build your own. RIGblaster from West Mountain Radio and MFJ have hardware and software for the digital modes. They do not yet have WSJT on their CD's. Either Bill or Ed can supply you with a schematic if you are a builder. 73's Bill WA6QYR

73's Bill

Doug (K6JEY) working Sam (K6VLM) by cw on 24.192 GHz! Sam was working from his house in La Mirada (DM03xv) & Doug on Signal Hill (DM03wt).The QSO took place on Saturday, 12 Jan. 2001 @ 1:10 pm (+/-) local time. SSB & FM were worked as well. Sam's rig was one of the "P-Com" units & Doug's a 10 mW Celeritek. A contact was tried w/ Dave (WA6CGR) from the park near his house w/o success. K6RRA photo and text.

The San Bernardino Microwave Society is a technical amateur radio club affiliated with the ARRL having a membership of over 90 amateurs from Hawaii and Alaska to the east coast. Dues are $15 per year, which includes a badge and monthly newsletter. Your mail label indicates your call followed by when your dues are due. Dues can be sent to the treasurer as listed under the banner on the front page. If you have material you would like in the newsletter please send it to Bill WA6QYR at 247 Rebel Road Ridgecrest, CA 93555, bburns@ridgecrest.ca.us, or phone 760-375-8566. The newsletter is generated about the 15th of the month and put into the mail at least the week prior to the meeting. This is your newsletter. SBMS Newsletter material can be copied as long as SBMS is identified as source.

San Bernardino Microwave Society newsletter

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